

IN THE CLAIMS:

Please cancel claim 1 without prejudice or disclaimer, amend claims 4-8, and add new claims 10-15, as follows:

1. (Cancelled).
2. (Original) An etching method for plasma-etching an SiO_2 film layer covering an SiN_x film layer formed at a workpiece placed inside an air-tight processing chamber by raising to plasma a processing gas induced into said processing chamber, comprising
 - a first step in which said SiO_2 film layer is etched by using a mixed gas containing at least C_4F_8 and CO as said processing gas; and
 - a second step in which a switch is made to a mixed gas containing at least C_4F_8 and CH_2F_2 to be used as said processing gas to etch said SiO_2 film layer immediately before said SiN_x film layer becomes exposed.
3. (Original) An etching method for plasma-etching an SiO_2 film layer covering an SiN_x film layer formed at a workpiece placed inside an air-tight processing chamber by raising to plasma a processing gas induced into said processing chamber, comprising
 - a first step in which said SiO_2 film layer is etched by using a mixed gas containing at least C_4F_8 and CO as said processing gas; and
 - a second step in which a switch is made to a mixed gas containing at least C_4F_8 and CH_2F_2 to be used as said processing gas to etch said SiO_2 film layer immediately after said SiN_x film layer becomes exposed.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

4. (Currently Amended) An etching method according to ~~any of claims 1, 2 and 3~~
claim 2 or 3, wherein; the flow rate ratio ($\text{CH}_2\text{F}_2 / \text{C}_4\text{F}_8$) of C_4F_8 and CH_2F_2 in said
mixed gas containing at least C_4F_8 and CH_2F_2 is set essentially within a range of
0.4 ~ 1.0.
5. (Currently Amended) An etching method according to ~~any of claims 1, 2 and 3~~
claim 2 or 3, wherein; the partial pressure corresponding to C_4F_8 relative to the
entire pressure of said mixed gas ~~containing~~ containing at least C_4F_8 and CH_2F_2
is set essentially within a range of 0.4 (mTorr) ~ 0.8 (mTorr).
6. (Currently Amended) An etching method according to ~~any of claims 1, 2 and 3~~
claim 2 or 3, wherein; the density of plasma excited inside said processing
chamber is set essentially within a range of 1.5×10^{10} (number of ions / cm^3) ~
 1.2×10^{11} (number of ions / cm^3).
7. (Currently Amended) An etching method according to ~~any of claims 1, 2 and 3~~
claim 2 or 3, wherein;
said workpiece is placed on a mounting surface of a susceptor provided
inside said processing chamber; and
the temperature of said susceptor is set essentially within a range of 20 °C
~ the heat resistance temperature of a photoresist layer constituting a
mask pattern for said SiO_2 film layer.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202.408.4000
Fax 202.408.4400
www.finnegan.com

8. (Currently Amended) An etching method according to ~~any of claims 1, 2 and 3~~
claim 2 or 3, wherein; said mixed gas containing at least C_4F_8 and CH_2F_2 further
contains an inert gas.
9. (Original) An etching method according to claim 2 or 3, wherein said mixed gas
containing at least C_4F_8 and CO further contains an inert gas.
10. (New) An etching method for plasma-etching of an SiO_2 film layer covering an
 SiN_x film layer formed at a workpiece placed inside an air-tight processing
chamber, the method comprising:
- introducing a processing gas of a mixed gas containing at least C_4F_8 and
 CH_2F_2 into said processing chamber;
 - raising the processing gas to a plasma; and
 - etching the SiO_2 film layer selectively to the SiN_x film layer.
11. (New) An etching method according to claim 10, wherein the flow rate ratio of
 CH_2F_2 to C_4F_8 in said mixed gas containing at least C_4F_8 and CH_2F_2 ranges from
0.4 to 1.0.
12. (New) An etching method according to claim 10, wherein the partial pressure
corresponding to C_4F_8 relative to the entire pressure of said mixed gas containing

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202 408 4000
Fax 202 408 4400
www.finnegan.com

at least C_4F_8 and CH_2F_2 is set essentially within a range of 0.4 mTorr ~ 0.8 mTorr.

13. (New) An etching method according to claim 10, wherein the density of plasma excited inside said processing chamber is set essentially within a range of $1.5 \times 10^{10} \sim 1.2 \times 10^{11}$ ions / cm^3 .
14. (New) An etching method according to claim 10, wherein:
said workpiece is placed on a mounting surface of a susceptor provided
inside said processing chamber; and
the temperature of said susceptor is set essentially within a range of 20 °C
~ the heat resistance temperature of a photoresist layer constituting a
mask pattern for said SiO_2 film layer.
15. (New) An etching method according to claim 10, wherein said mixed gas containing at least C_4F_8 and CH_2F_2 further comprises an inert gas.

FINNEGAN
HENDERSON
FARABOW
GARRETT &
DUNNER LLP

1300 I Street, NW
Washington, DC 20005
202 408 4000
Fax 202 408 4400
www.finnegan.com